SEP 2 4 1988

A13.78:PNW-RP-397

United States
Department of
Agriculture

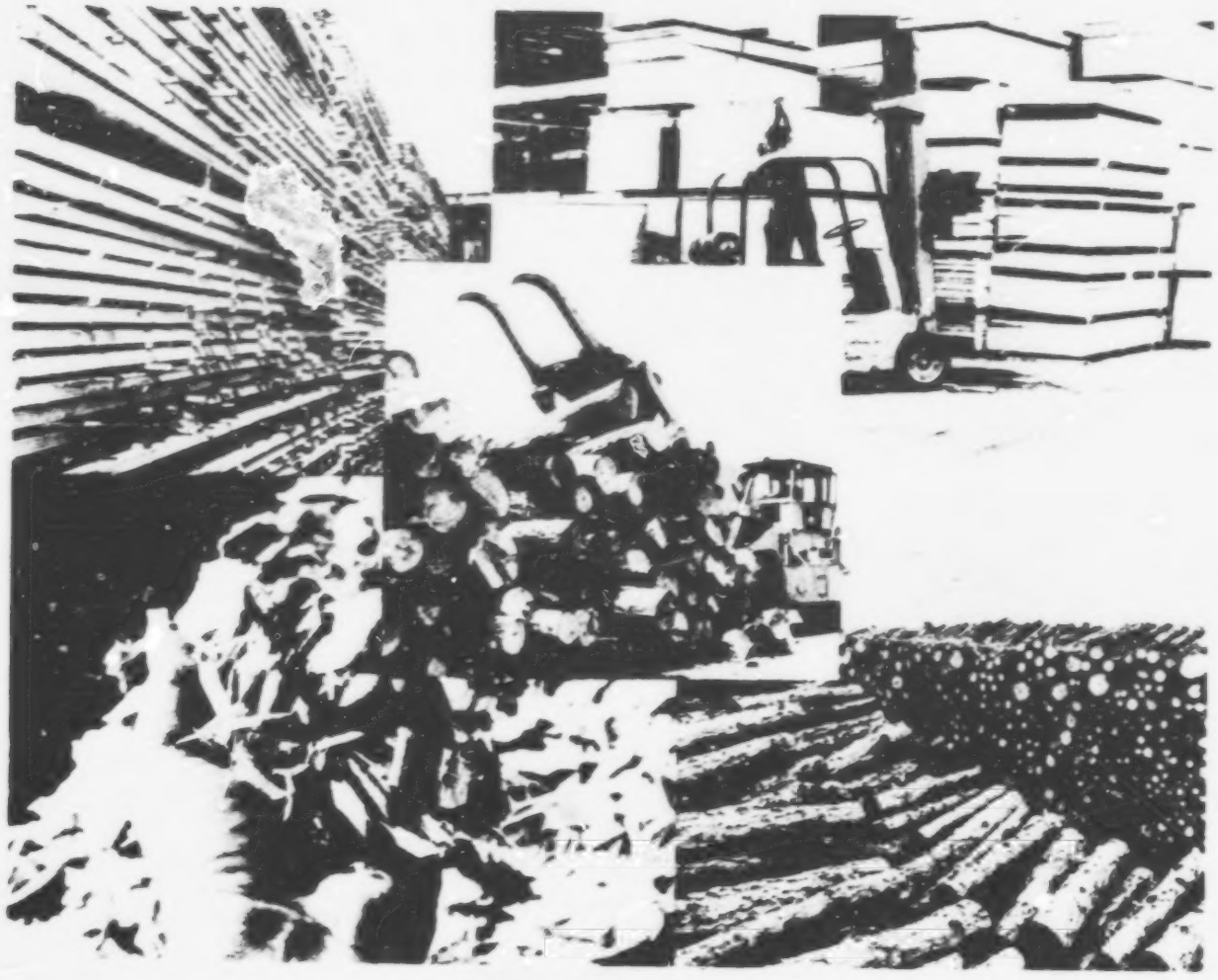
Forest Service

Pacific Northwest
Forest and Range
Experiment Station

Research Paper
PNW-RP-397
July 1988

FLORIDA'S Forest Products Industry: Performance and Contribution to the State's Economy, 1970 to 1980

Wilbur R. Maki, Con H Schallau, Bennett B. Foster, and Clair H. Redmond



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Abbreviations

States

AL	Alabama
AR	Arkansas
FL	Florida
GA	Georgia
KY	Kentucky
LA	Louisiana
MS	Mississippi
NC	North Carolina
OK	Oklahoma
SC	South Carolina
TN	Tennessee
TX	Texas
VA	Virginia
SO	South
US	United States

Industries

FPI	Forest Products Industry
LWP	Lumber and Wood Products
PAP	Paper and Allied Products
WF	Wood Furniture

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Abstract

Maki, Wilbur R.; Schallau, Con H; Foster, Bennett B.; Redmond, Clair H. 1988. Florida's forest products industry: performance and contribution to the State's economy, 1970 to 1980. Res. Pap. PNW-RP-397. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 22 p.

Although tourism and retirement-related activities dominate the economy in Florida, the forest products industry is a basic industry in northern Florida. Growth in employment was above the national average during the 1970's, and value added by the forest products industry increased between 1972 and 1977. Florida was one of the majority of Southern States in which the forest products industry improved its competitive position during the 1970's.

Keywords: Forest products industries, economics (forest products industries), employment (forest products industries), Florida.

Preface

This report briefly describes Florida's forest products industry—its composition, location, evolution, and relation to economic activity elsewhere in the State, the South, and the Nation.

This is one in a series of reports for each of the 13 Southern States. These reports are companions to an analysis of the interregional competition in the forest products industries between the South and the Pacific Northwest.

Estimates of employment and earnings shown in this report were derived from U.S. Department of Commerce data. All references to dollar amounts are in constant 1977 dollars.

Highlights

- The forest products industry is a basic industry in northern Florida; that is, it exports forest products and by doing so brings in new dollars to support economic growth and development. Florida is not self-sufficient in forest products, however.
- Florida's forest products industry has three segments: allied products, lumber and wood products (not including mobile homes), and wood furniture manufacturing. In employment, the lumber and wood products segment was the largest, but paper and allied products accounted for the largest share of the total earnings in the State's forest products industry.
- In 1977, paper and allied products had the largest share of the $865 million of value added by Florida's forest products industry.
- Paper and allied products had, by far, the highest productivity in Florida's forest products industry. Productivity per worker hour was nearly 50 percent higher than the average for the State's forest products industry. Productivity in wood furniture, which was low to begin with, increased by only 2 percent between 1972 and 1977.
- Florida was one of the majority of Southern States in which the forest products industry improved its competitive position from 1972 to 1977.

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The Forest Products Economy of Florida

The Work Force

Florida's estimated full- and part-time work force in 1980 was comprised of an estimated 4.2 million employees and proprietors (see appendix 1, table 1, for sources of employment and earnings data). Florida's work force grew far faster between 1970 and 1980 than did the national average (52.8 vs. 22.3 percent). Total earnings—wage and salary payments and proprietorial income—also grew much faster than the national average. Measured in constant 1977 dollars, the State's earnings increased by 58.7 percent vs. 27.4 percent for the Nation. As shown in the following tabulation, services, retail trade, State and local government, and manufacturing were the State's four largest employer categories, as they were for the Nation.

	Percent of total employment 1980	
Employers	Florida	U.S.
Major industries:		
Services	20.7	18.2
Retail trade	17.1	14.2
State and local government	12.5	12.6
Manufacturing (including the forest products industry[1])	10.7	19.2
Self-employed	7.4	6.6
Finance, insurance, and real estate	6.2	5.0
Construction	6.2	4.1
Transportation	5.2	4.8
Wholesale trade	4.8	5.0
Agriculture	4.2	4.4
Federal military	2.8	2.3
Federal civilian	2.1	2.8
Mining	.3	1.0
Total[2]	100.0	100.0

[1] The forest products industry has three segments: (1) lumber and wood products (SIC 24) except mobile homes (SIC 2451); (2) wood furniture manufacturing (SIC 2511, 2512, 2517, 2521, 2541); and (3) paper and allied products (SIC 26).

[2] Sum of parts may not equal totals because of rounding.

Components of the Economic Base

Along with total employment, another and perhaps more important way exists to judge an industry's contribution to Florida's economy. For the State's economy to grow and develop, it must attract new dollars so residents can buy goods and services produced elsewhere. The industries that export products and services beyond local boundaries (that is, to elsewhere in the State, to other States, and to the world) and bring in new dollars constitute the area's economic base. In general, most manufacturing employment is classified as economic base (or basic); service or residentiary employment (for example, barber shops, realty firms, schools, and local government) is geared primarily to producing for local needs. Some services may, however, be basic. Federal military employment provides national defense for all the Nation's citizens, and taxpayers outside Florida provide financial support for this activity. Federal military therefore qualifies as one of Florida's basic industries.

Residentiary employment and its earnings are supported by the economic base. Money flowing into a State from goods and services sold to businesses, governments, and households outside the State provides the income that reimburses wage earners and the self-employed for their services. This income is largely spent for locally available goods and services. The economic growth of an area thus depends on the success of its economic base; the residentiary activities—which serve businesses, government, and household residents of the State—enhance the business climate and the quality of life of these residents.

We used the excess employment and excess earnings techniques to identify the industries comprising Florida's (or a sub-State district's) economic base. This approach accepts the national distribution of employment and earnings among industries as the norm. Any industry with employment in excess of this norm is considered to be producing for export markets outside the State (or sub-State district) and is part of Florida's economic base, provided that the proportion of full-time employment and the productivity of this employment is the same as that for the rest of the Nation. Because of the many part-time workers in farming in Florida, the total earnings of this employment is used as an alternative measure of industry dependency. Although the percentage distribution of the total earnings differs sharply from the total employment distribution, the two measures are consistent in that earnings data adjust for the above-average part-time employment in a basic industry like farming. The air transportation industry provides a contrasting situation. Because of above-average wages, this industry accounts for a larger share of the State's basic earnings than it does basic employment.

In this study, the percentage of Florida's excess employment and earnings served as an indicator of the State's dependency on a particular industry for generating new dollars from outside the State (appendix 1, table 2, shows how excess employment and industry dependency indicators for Florida were calculated).

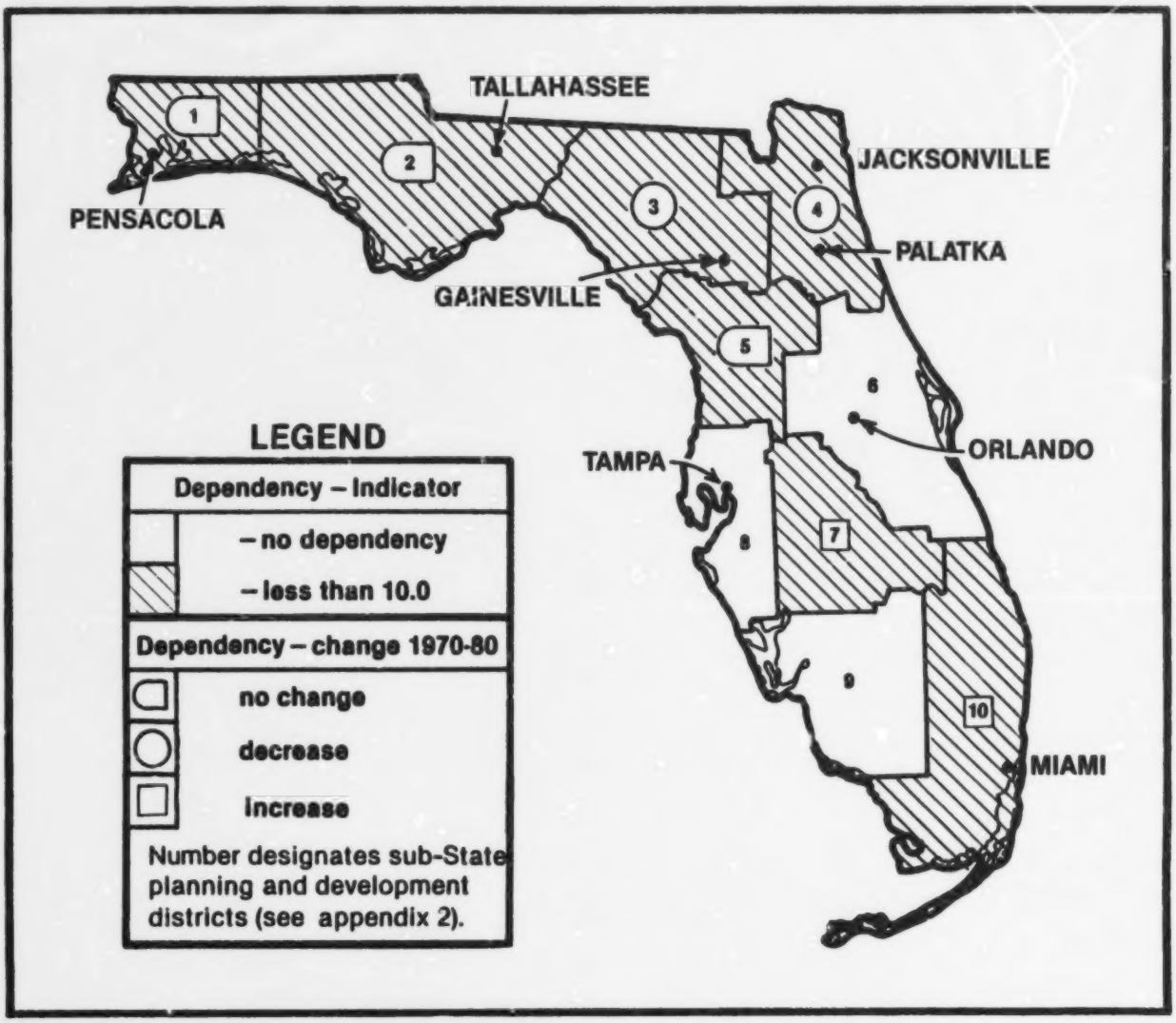
In 1980, 10 industries accounted for 87.4 percent of the State's excess employment and 75.4 percent of the excess earnings—that is, its economic base (see tabulation below). The same industries accounted for a similar share (87.8 percent) of excess employment and a slightly larger share of excess earnings (81.9 percent) in 1970. The performance of individual industries differed, however. Between 1970 and 1980, for example, the tourism and recreation industry—as reflected by changes in the retail trade, hotel and other lodging, amusement, and air-transportation industries—increased its share of basic employment (from 36.1 to 39.6 percent), while its share of basic earnings declined. The same trend was exhibited by retirement-based industries (construction; real estate and combinations; and personal, miscellaneous business and repair services). Meanwhile, agriculture's share of basic employment and basic earnings increased.

At the State level, the forest products industry does not qualify as a basic industry. Although this industry exports some products to markets outside of Florida, the State is not self-sufficient in wood products. This industry, nevertheless, qualifies as a basic industry in some sub-State districts.

	Dependency indicator			
	1970		1980	
Economic base industries	EMP	EARN	EMP	EARN
	(Percent of economic base)			
Retail trade	22.2	19.0	22.3	19.9
Construction	16.6	19.4	15.5	12.0
Agriculture	8.6	2.8	10.7	7.8
Hotel and other lodging	9.2	6.1	8.1	5.0
Real estate and other combinations	5.3	7.7	7.9	7.0
Self-employed	8.4	4.8	5.9	4.7
Amusement	2.0	2.0	5.1	3.8
Personal, miscellaneous business, and repair services	3.8	2.3	4.4	2.8
Air transportation	5.0	9.0	4.1	7.2
Federal military	6.7	8.8	3.4	5.2
Subtotal	87.8	81.9	87.4	75.4
All other basic industries	12.2	18.1	12.6	24.6
Total	100.0	100.0	100.0	100.0

Geographical Importance of the State's Forest Products Industry

The forest products industry is a basic industry in several sub-State districts in northern Florida (see appendix 2 for a list of counties by district). In two districts—Gainesville and Palatka—the importance increased between 1970 and 1980.



Source: Sub-State estimates for 1970 and 1980 were derived from unpublished county data series provided by the U.S. Department of Commerce, Regional Economic Information System, Washington, DC; and from the Department's *County Business Patterns*. The numbers designate sub-State districts corresponding to the geographical classification of counties as shown in appendix 2.

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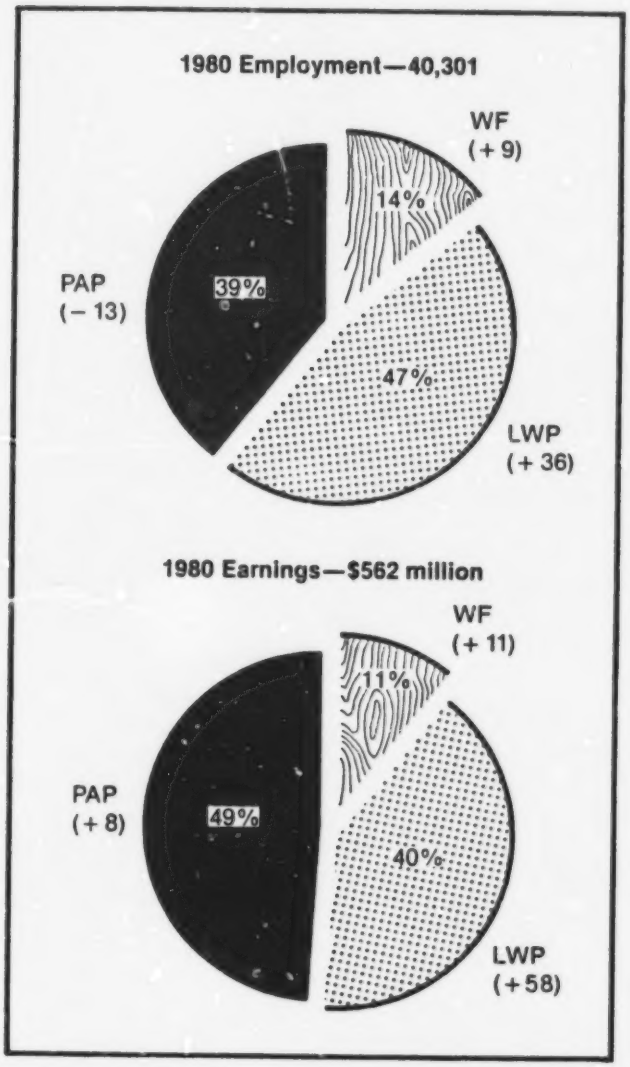
Compcsition of the Forest Products Industry

Florida's forest products industry has three segments: (1) paper and allied products, (2) lumber and wood products (not including mobile homes), and (3) wood furniture manufacturing. Employment in the lumber and wood products segment was the largest, but paper and allied products accounted for a larger share of the total earnings in the State's forest products industry.

Although employment decreased in paper and allied products between 1970 and 1980, it increased in the other two segments. The growth of the lumber and wood products segment is particularly noteworthy.



Numbers in parentheses show percentage of change from 1970 to 1980.

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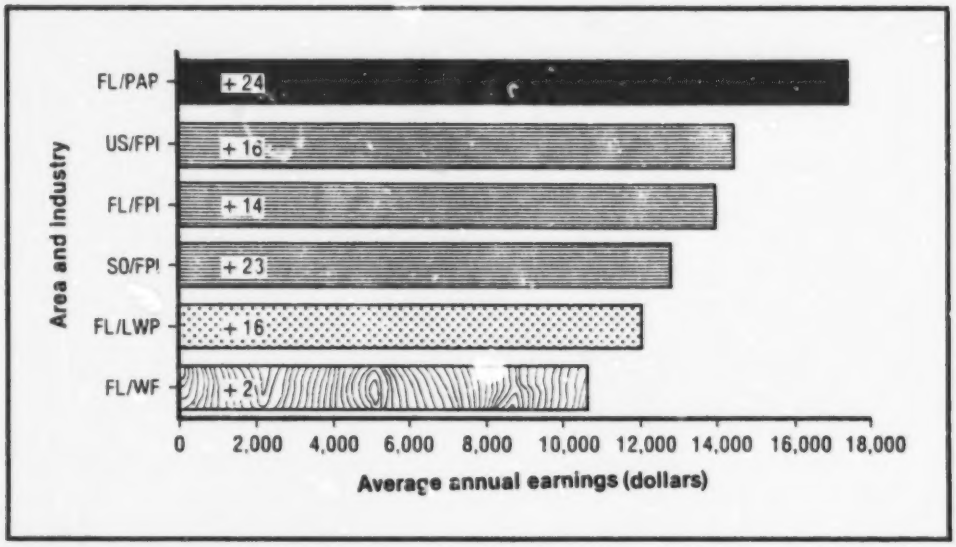
Average Annual Earnings per Worker

Average annual 1980 earnings per worker in paper and allied products were greater than were earnings in the other two segments of the forest products industry. Higher average skill levels, greater capital investment per worker, and unions account for this difference. Earnings in the wood furniture industry were about 40 percent less than those for paper and allied products and were significantly below the average for all forest products industries in the South and the United States.

The rate of growth in average earnings for Florida's forest products industry was less than for the Nation and for the South. This resulted from the slow growth for wood furniture.



Numbers in bars show percentage of change from 1970 to 1980.

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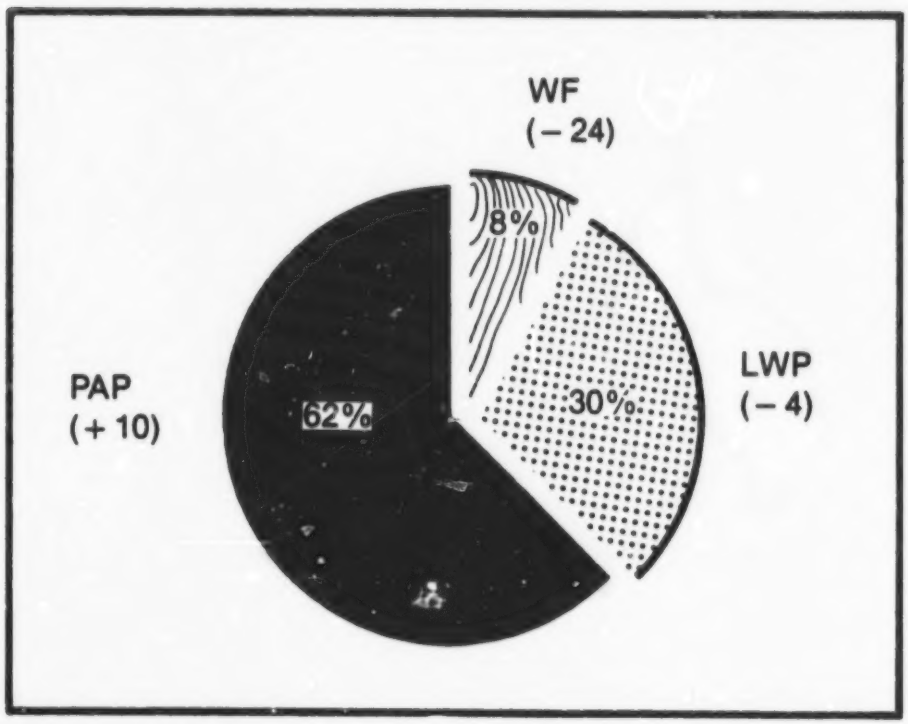
Value Added by the Forest Products Industry

Value added by manufacturing represents income payments made directly to workers and business owners. It is equal to the value of shipments less the cost of materials, parts, supplies, fuel, goods purchased for resale, electric energy, and contract work. Value of shipments includes goods and services provided by other industries. Value added includes only the economic contributions of a particular industry. Consequently, value added by manufacturing is considered a better monetary gauge of the relative economic importance of an industry. In 1977, paper and allied products had the largest share of the $865 million of value added by Florida's forest products industry.

In contrast to above-average growth in employment in the forest products industry, value added by this industry barely increased between 1972 and 1977. And this increase came on the strength of only paper and allied products; value added by the wood furniture and the lumber and wood products segments actually decreased.



Numbers in parentheses show percentage of change from 1972 to 1977.

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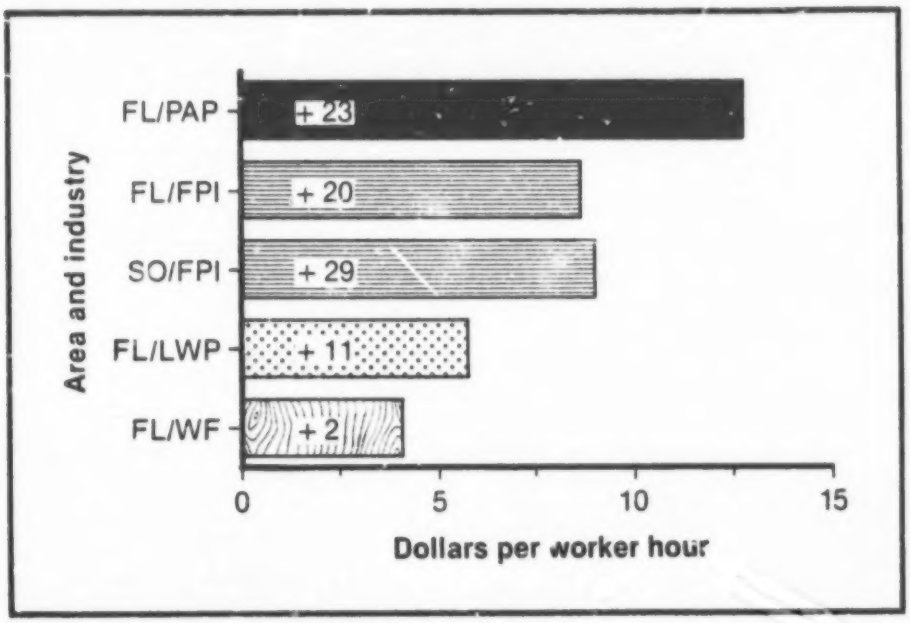
Capital Productivity

Increases in productivity are necessary for an industry to remain competitive in the marketplace. Capital productivity of an industry is measured in terms of value added minus payroll per worker hour—VAMP (see appendix 1, table 3, for an explanation of how productivity was calculated for Florida's forest products industry). This measure of productivity represents profits before taxes and adjusts for wide differences in payroll among industries.

Paper and allied products is more capital intensive than the other segments of the industry and in the past attracted considerable investment in new facilities and equipment. During the mid-1970's, its productivity consequently increased despite significantly higher and increasing labor costs. This segment exhibited a smaller gain in productivity than was average for the South, however.

Paper and allied products had, by far, the highest productivity in Florida's forest products industry. Productivity per worker hour was nearly 50 percent higher than the average for the State's forest products industry. Productivity in wood furniture, which was low to begin with, increased by only 2 percent between 1972 and 1977.



Numbers in bars show percentage of change from 1972 to 1977.

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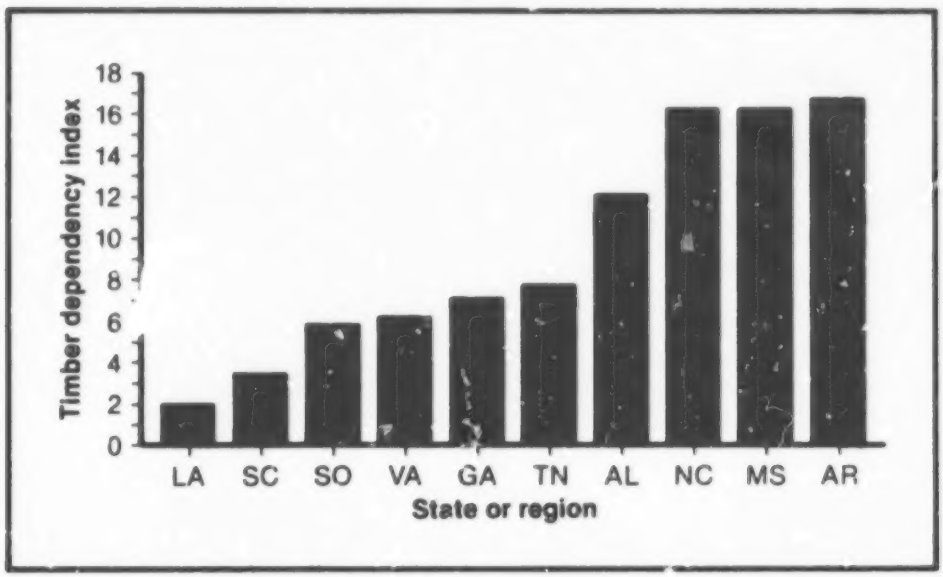
The Forest Products Industry in the South

Importance of the Industry Across the South

The dependency indicators suggest that in 1980 all but four States in the South manufactured forest products in excess of statewide needs. Florida, Kentucky, Oklahoma, and Texas were not self-sufficient in forest products; that is, these States imported more forest products than they exported. Consequently, on net balance, their respective forest products industries did not generate new dollars from the outside. In three States—Arkansas, Mississippi, and North Carolina—the forest products industry accounted for about one of six basic employees.



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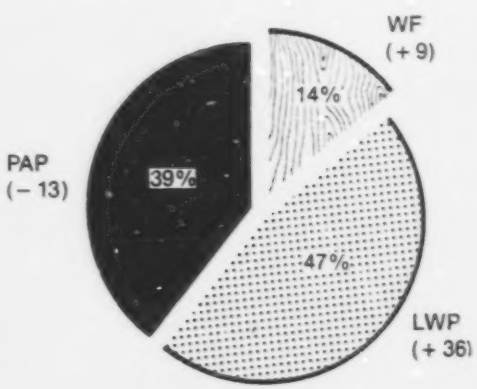
Industry Composition

Both the paper and allied products and the lumber and wood products segments accounted for larger shares of 1980 employment and earnings in Florida's forest products industry than they did for the South and the Nation. Change in earnings and employment in the State's paper and allied product segment contrasted sharply with the averages for the South. Between 1970 and 1980, changes in earnings and employment did not keep pace with the South. The Nation, like Florida, experienced a decline in employment in the pulp and paper segment.

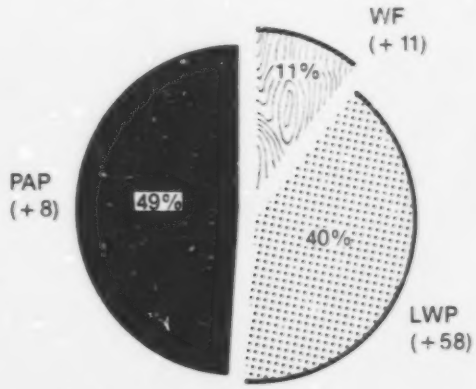
Wood furniture is less prominent in Florida than in the South and the Nation, but this segment grew faster than its national counterpart.

FLORIDA

1980 Employment—40,301

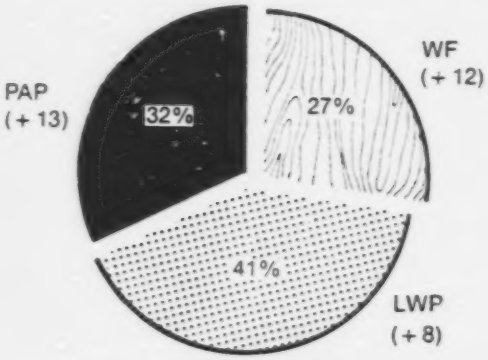


1980 Earnings—$562 million

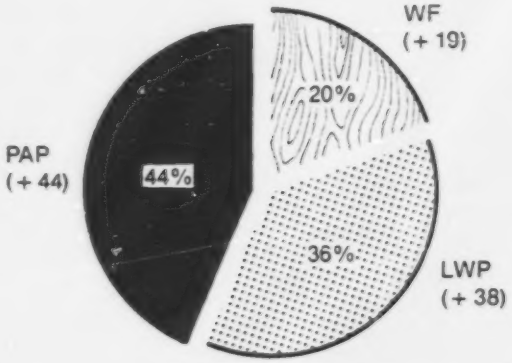


THE SOUTH

1980 Employment—620,567

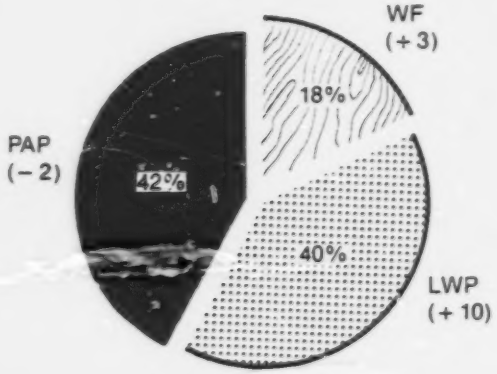


1980 Earnings—$7.96 billion

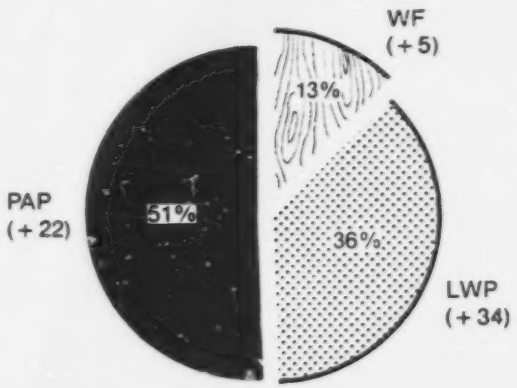


UNITED STATES

1980 Employment—1,634,000



1980 Earnings—$23.65 billion



Numbers in parentheses show percentage of change from 1970 to 1980.

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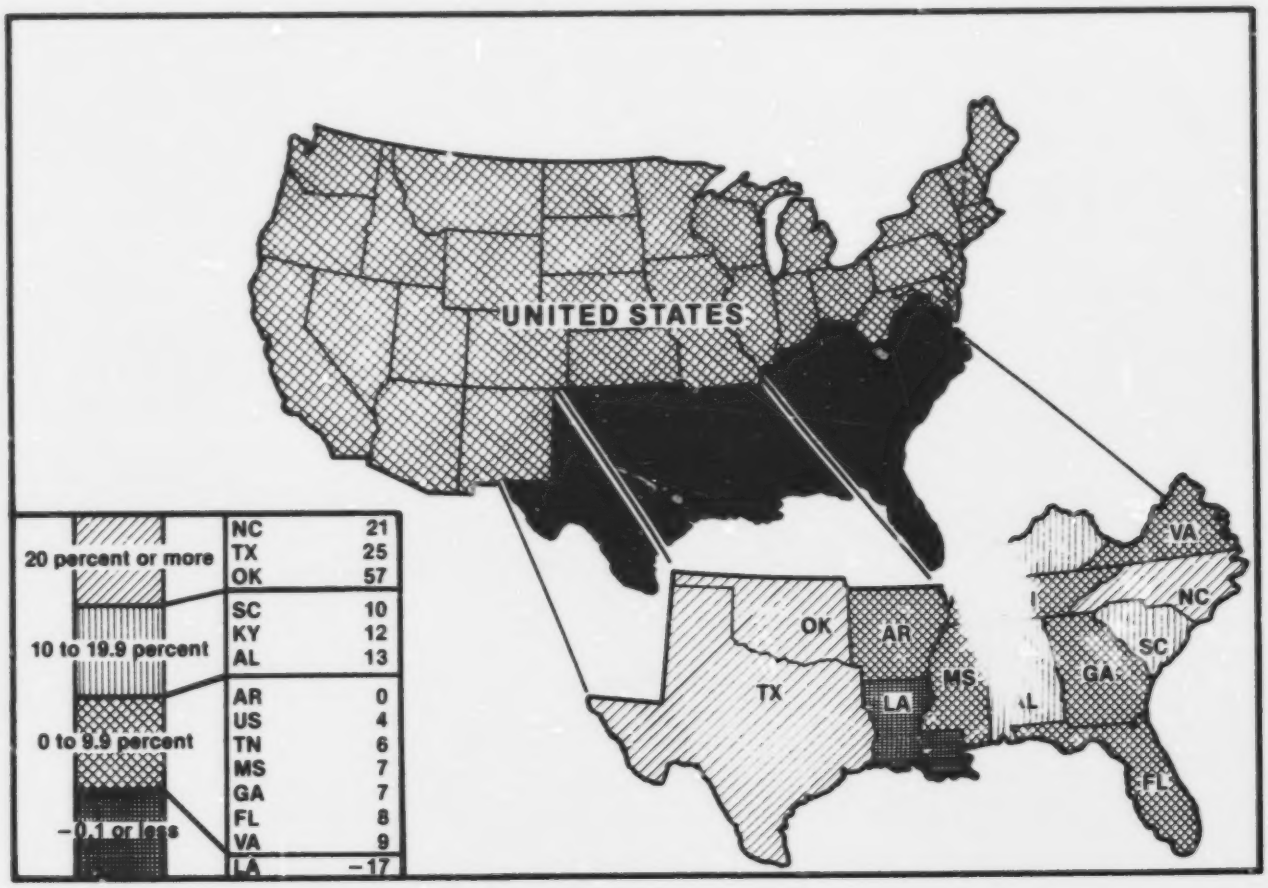
Growth of Employment

With the exceptions of Arkansas and Louisiana, employment in the forest products industry in each of the Southern States grew faster than did the U.S. counterpart. Between 1970 and 1980, employment in Oklahoma and Texas grew faster than the all-industry average of 22.3 percent. Between 1970 and 1980, employment in the forest products industry in Florida increased by more than 3,000 despite a loss of nearly 2,300 employees in the paper and allied products segment.



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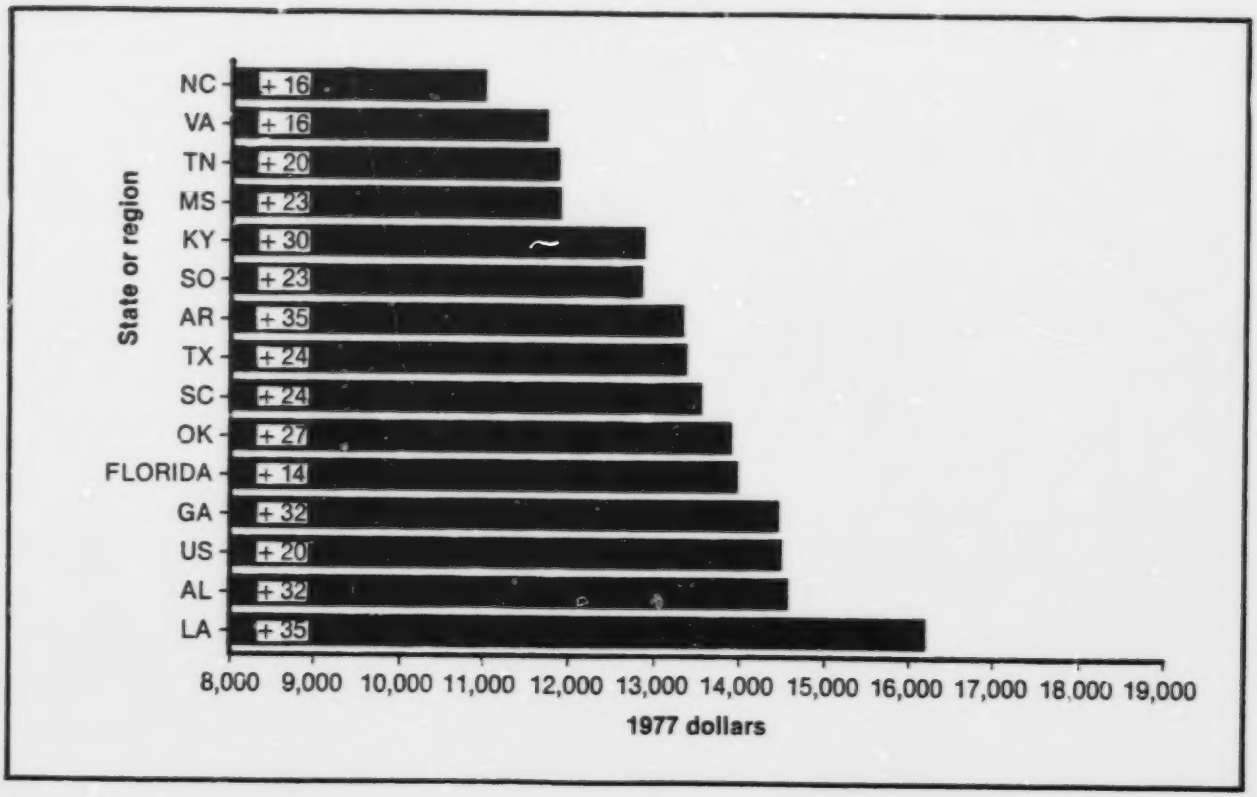
Average Annual Earnings

Average annual earnings per worker in the forest products industry differed significantly by State in 1980. About $5,000 separated the State with the highest (Louisiana) from the State with the lowest (North Carolina). Pulp and allied products manufacturing, which has traditionally paid higher wages than have other segments of the forest products industry, dominated Louisiana's forest products industry. Wood furniture, which has paid lower average wages, dominated North Carolina's industry.

Average annual earnings in the forest products industry in Florida were above the average for all States in the South but below the average for the United States. The increase in earnings in Florida was somewhat below that for the South and the Nation.



Numbers in bars show percentage of change from 1970 to 1980.

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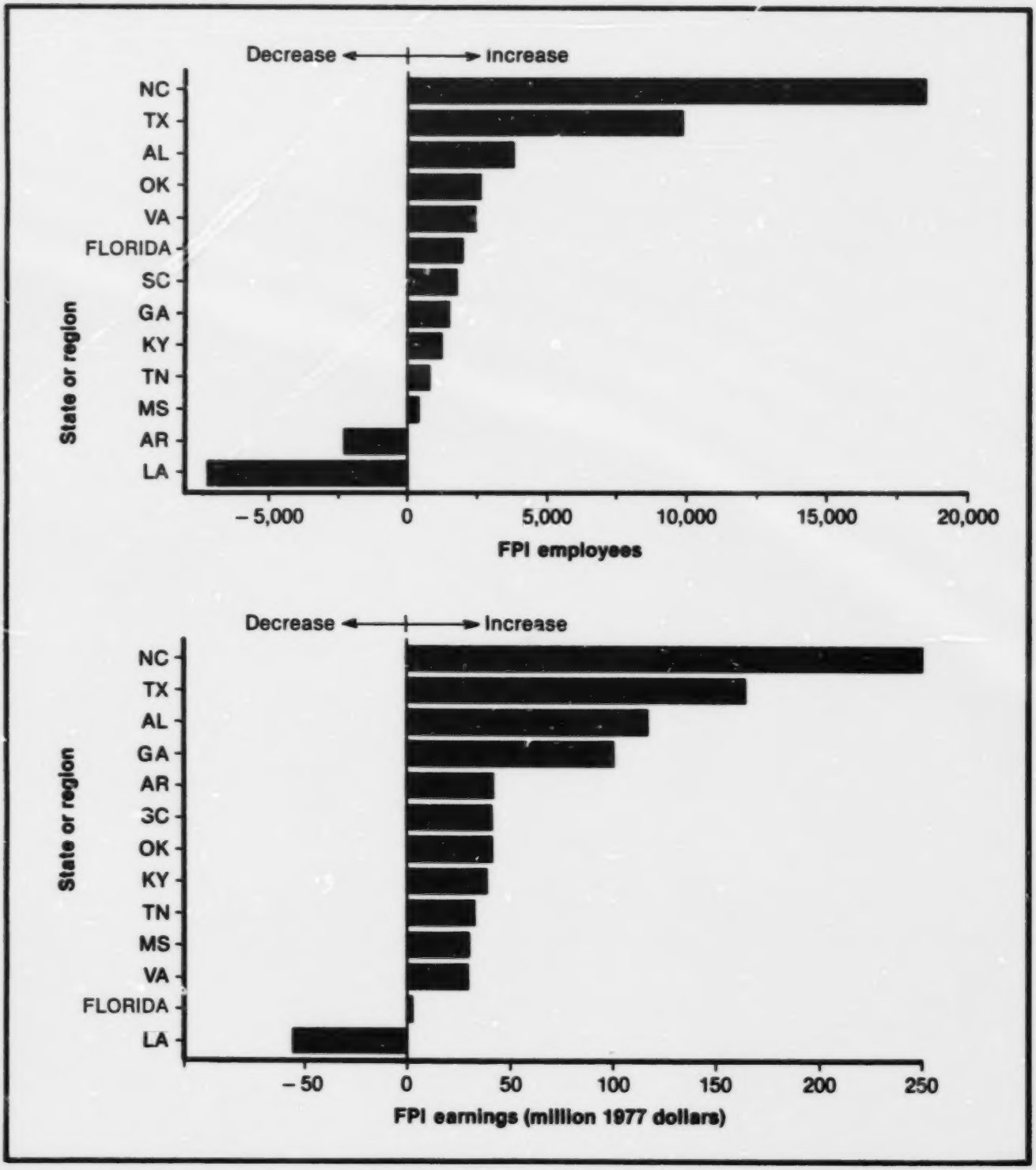
Shift in Employment and Earnings

Between 1970 and 1980, total employment in the Nation's forest products industry remained constant; except for Louisiana, it increased in every Southern State. All Southern States except Arkansas and Louisiana increased their share of the Nation's forest products industry employment, and all but Louisiana increased their share of earnings.

The regional shift shows how much more or less employment and earnings a State would have had in the forest products industry in 1980 had it grown at the national rate. Florida, for example, had nearly 3,100 more employees in 1980 than it would have had if its forest products industry had grown at the national rate.

Increased shares of employment and earnings reflect the comparative advantage the South's forest products industry enjoyed over competitors elsewhere. Florida was one of the majority of Southern States in which the forest products industry improved its competitive position during the 1970's. Several factors (for example, relatively lower labor costs, lower raw materials costs, and closer proximity to markets) might account for a State's comparative advantage, although adverse trends in one factor need not reduce it's advantage. For instance, increasing labor costs need not adversely affect the South's comparative advantage if those costs are offset by increased capital or labor productivity.



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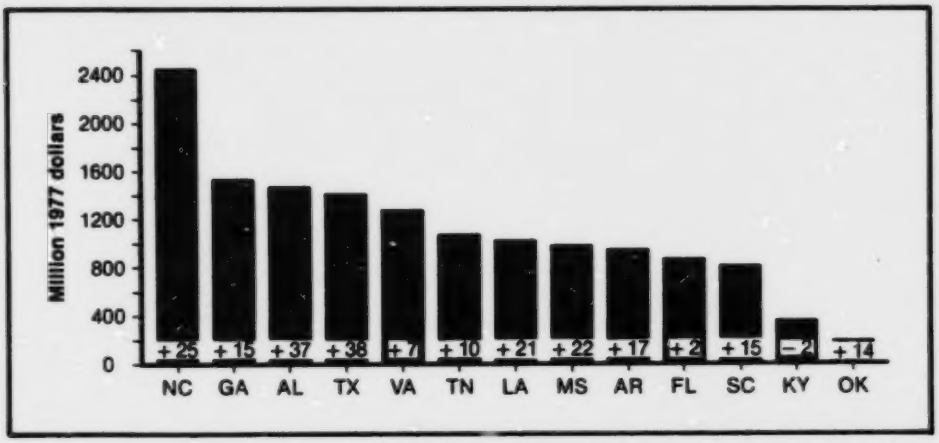
Value Added by the Forest Products Industry

In 1977, North Carolina led the South in value added by the forest products industry. Florida was tenth. Texas not only was one of the leading States in total value added but also led the South in the change in value added between 1972 and 1977. One State, Kentucky, produced less value added in 1977 than in 1972.



Numbers in bars show percentage of change from 1972 to 1977.

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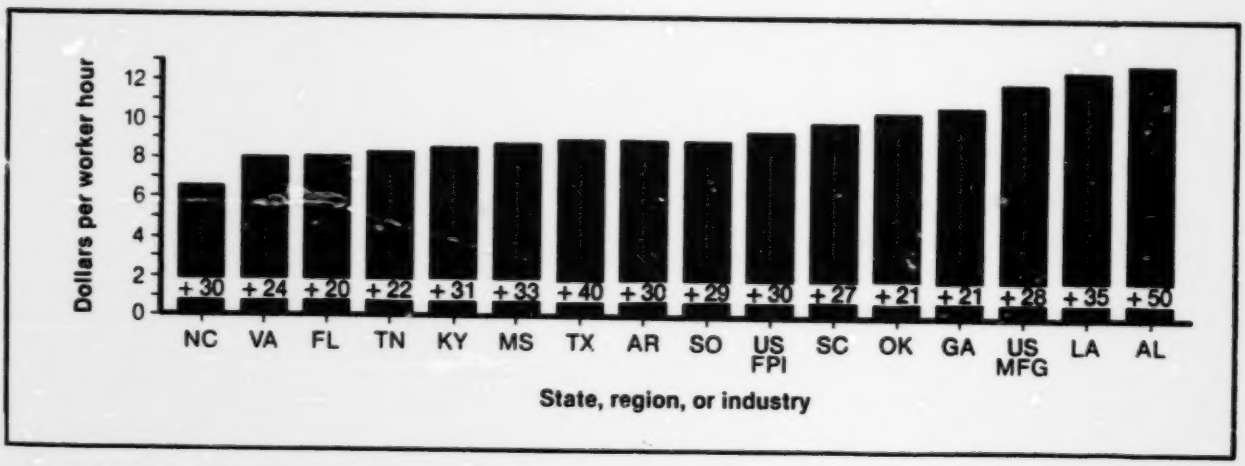
Capital Productivity

The paper and allied products segment, which is more capital-intensive and therefore more susceptible to technological change than are other segments of the forest products industry, exhibited the highest productivity within the forest products industry. Wood furniture, on the other hand, is the most labor-intensive of the three. North Carolina produced more value added than any other State in the South, but the productivity of its forest products industry in 1977 was the lowest. This reflects the dominant role of labor-intensive wood furniture manufacturing in North Carolina.

Increases in productivity exceeded increases in payroll per worker between 1972 and 1977 for all the Southern States. This relation is, in part, responsible for the South's comparative advantage in the forest products industry.

In 1977, growth of productivity of the paper and allied products segment (23 percent) in Florida is less than the average for the forest products industry in the South. But the growth in productivity of the other two segments lagged behind the growth for the South.



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Acknowledgment

Many helpful suggestions of several reviewers were incorporated in this research report. This project was funded in part by USDA Forest Service, Resource Program and Assessment Staff, and State and Private Forestry, Area Planning and Development, State Planning for Forest Resources.

Appendix 1

Tables

Table 1—Total labor and proprietorial employment and income, by industry, Florida, 1980[1]

Industry number	Industry	Employees	Total income
		Number	*Thousand 1977 dollars[2]*
Wage and salary			
1	Agriculture	69,811	1,196,861
2	Agricultural services, forestry, and fisheries	67,128	450,645
3	Coal Mining	24	1,247
4	Oil and gas extraction	729	19,825
5	Metal mining	352	6,527
6	Nonmetallic minerals	9,751	152,608
7	Construction	261,008	3,514,906
8	Food and kindred products	48,483	634,823
9	Tobacco	2,345	24,263
10	Textile mill production	3,365	32,806
11	Apparel and other textiles	33,717	245,908
12	Paper and allied products	15,855	276,110
13	Printing and publishing	40,753	485,009
14	Chemical and allied products	26,476	461,206
15	Petroleum refining	1,771	35,233
16	Rubber and miscellaneous plastics	16,730	180,120
17	Leather and leather products	3,518	26,907
18	Lumber and wood products, excluding mobile homes	18,828	226,548
19	Mobile homes	3,916	47,119
20	Wood furniture	5,729	60,838
21	Other furniture and fixtures	5,618	59,659
22	Stone, clay, and glass products	20,813	302,380
23	Primary metals	4,873	74,488
24	Fabricated metals	34,922	486,727
25	Machinery, excluding electrical	36,008	562,306
26	Electrical machinery	60,140	866,446
27	Transportation equipment, excluding motor vehicles	44,538	810,150
28	Motor vehicles	2,333	32,802
29	Instruments and related equipment	14,274	171,412
30	Miscellaneous manufacturing	7,544	77,179
31	Railroad transportation	10,970	216,170
32	Trucking and warehousing	39,004	583,575
33	Local transit	6,987	93,903

Table 1—Total labor and proprietorial employment and income, by industry, Florida, 1980[1] (continued)

Industry number	Industry	Employees	Total income
		Number	*Thousand 1977 dollars*[2]
34	Air transportation	41,729	886,577
35	Pipeline transportation	59	981
36	Transportation services	11,625	145,423
37	Water transportation	13,032	164,265
38	Communications	69,392	1,331,285
39	Electrical, gas, and sanitation services	27,069	550,323
40	Wholesale trade	202,916	3,216,716
41	Retail trade	726,338	5,845,760
42	Banking	56,172	588,329
43	Other credit agencies	53,148	806,087
44	Insurance	66,594	998,954
45	Real estate and combinations	87,214	972,493
46	Hotel and other lodging	89,842	656,037
47	Personal, miscellaneous business and repair services	195,562	3,036,974
48	Auto repair service	31,686	386,269
49	Amusement	59,982	495,247
50	Motion pictures	6,326	45,509
51	Private households	82,528	300,755
52	Medical and other health	208,531	3,145,457
53	Private education	38,432	325,890
54	Nonprofit organizations	90,566	689,100
55	Miscellaneous services	72,422	1,747,330
56	Federal civilian	90,769	1,434,855
57	Federal military	116,658	1,042,508
58	State and local government	528,596	5,044,303
Proprietorial			
59	Nonfarm proprietors	311,852	3,361,313
60	Farm proprietors	40,954	631,473
Total		4,238,307	50,266,919

[1] Source of data for this table for Florida, other States of the South, and the United States: unpublished data, U.S. Department of Commerce, Regional Economics Measurements Division, Regional Economic Information System (REIS), Washington, DC, 1982. Unpublished data used by the U.S. Department of Commerce in preparing their *County Business Patterns* (CBP) series on employment and payroll were used to differentiate wood-related from nonwood-related employment and earnings. For example, CBP data were used to separate mobile homes (no. 19, above) from the lumber and wood products (no. 18) industry. Wood furniture (no. 20) was similarly separated from other furniture and fixtures (no. 21).

[2] The Personal Consumption Expenditures (PCE) deflator, 1977 = 100, was used to deflate nominal dollars.

Table 2—Calculation of 1980 dependency indexes for Florida
(In percent)

Industry	Employment		Florida excess employment[1]	Dependency index[2]
	Florida	United States		
Agriculture	1.92	1.46	.46	2.93
Agricultural services, forestry, and fisheries	1.85	.62	1.23	7.80
Farm proprietors	1.13	3.03	—	—
Coal mining	—	.27	—	—
Oil and gas extraction	.02	.60	—	—
Metal mining	.01	.11	—	—
Nonmetallic minerals	.27	.14	.13	.84
Construction	7.20	4.74	2.45	15.51
Food and kindred products	1.34	1.87	—	—
Tobacco	.06	.07	—	—
Textile mill production	.09	.93	—	—
Apparel and other textiles	.93	1.39	—	—
Paper and allied products	.44	.76	—	—
Printing and publishing	1.12	1.37	—	—
Chemical and allied products	.73	1.22	—	—
Petroleum refining	.03	.22	—	—
Rubber and miscellaneous plastics	.46	.80	—	—
Leather and leather products	.10	.26	—	—
Lumber and wood products, excluding mobile homes	.52	.71	—	—
Mobile homes	.11	.05	.06	.36
Wood furniture	.15	.32	—	—
Other furniture and fixtures	.16	.19	—	—
Stone, clay, and glass products	.57	.73	—	—
Primary metals	.13	1.26	—	—
Fabricated metals	.96	1.77	—	—
Machinery, excluding electrical	.99	2.73	—	—
Electrical machinery	1.66	2.31	—	—
Transportation equipment, excluding motor vehicles	1.23	1.21	.02	.10
Motor vehicles	.06	.87	—	—
Instruments and related equipment	.39	.77	—	—
Miscellaneous manufacturing	.21	.47	—	—
Railroad transportation	.30	.58	—	—
Trucking and warehousing	1.08	1.40	—	—
Local transit	.19	.29	—	—
Air transportation	1.15	.50	.65	4.12
Pipeline transportation	—	.02	—	—
Transportation services	.32	.22	.10	.62
Water transportation	.36	.23	.13	.82
Communications	1.91	1.48	.43	2.73
Electrical, gas, and sanitation services	.75	.90	—	—

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Table 2—Calculation of 1980 dependency indexes for Florida (continued)
(In percent)

Industry	Employment		Florida excess employment[1]	Dependency index[2]
	Florida	United States		
Wholesale trade	5.59	5.79	—	—
Retail trade	20.02	16.50	3.52	22.30
Banking	1.55	1.72	—	—
Other credit agencies	1.47	.99	.47	3.00
Insurance	1.84	1.89	—	—
Real estate and combinations	2.40	1.16	1.24	7.87
Hotel and other lodging	2.48	1.20	1.28	8.08
Personal, miscellaneous business, and repair services	5.39	4.69	.70	4.42
Auto repair service	.87	.63	.24	1.54
Amusement	1.65	.84	.81	5.14
Motion pictures	.17	.24	—	—
Medical and other health	5.75	5.71	.04	.23
Private education	1.06	1.47	—	—
Nonprofit organizations	2.50	3.01	—	—
Miscellaneous services	2.00	1.63	.36	2.29
Federal civilian	2.50	3.27	—	—
Federal military	3.22	2.68	.54	3.39
Nonfarm proprietors	8.60	7.66	.93	5.92
Total[3]	100.00	100.00	15.79	100.00

[1] Florida employment minus U.S. employment. Figures may not be exactly equal to Florida minus U.S. because of rounding. Dashes signify no excess employment.

[2] Individual industry excess employment expressed as a percentage of Florida's total excess employment (sum of column 4).

[3] Sum of parts may not equal totals because of rounding.

Table 3—Value added, hours worked, payroll, and capital productivity,[1] Florida forest products industry, 1977[2]

Industry	Value added	Payroll	Hours worked	Productivity	Productivity change, 1972-77
	- - *$Million* - -		*Million*	*$VAMP per hour*	*Percent*
Lumber and wood products	258.0	121.0	24.0	5.71	+11.20
Wood furniture	65.7	36.7	7.1	4.08	+1.84
Paper and allied products	541.0	227.5	24.6	12.74	+23.39

[1] Productivity equals value added minus payroll (VAMP) divided by hours worked. For a discussion of VAMP, see W. Charles Sawyer and Joseph A. Ziegler, 1980. "The use of VAMP shift as a predictive model." Unpublished paper presented at the annual meeting of the Western Regional Science Association, Monterey, California.

[2] Source: U.S. Bureau of the Census, Census of Manufactures, for 1972 and 1977, Florida and the United States, available in 1976 and 1980, respectively. In the few instances where data were not available for some subindustry segments, the distribution of the number of establishments was used to estimate nondisclosures.

Appendix 2
Florida Counties by Sub-State Planning and Development Districts

District code	Counties
1	Escambia, Okaloosa, Santa Rosa,
2	Bay, Calhoun, Franklin, Gadsden, Gulf, Holmes, Jackson, Jefferson, Leon, Liberty, Wakulla, Walton, Washington
3	Alachua, Bradford, Columbia, Dixie, Gilchrist, Hamilton, Lafayette, Madison, Suwannee, Taylor, Union
4	Baker, Clay, Duval, Flagler, Nassau, Putnam, St. Johns
5	Citrus, Hernando, Levy, Marion, Sumter
6	Brevard, Indian River, Lake, Orange, Osceola, Seminole, Volusia
7	De Soto, Hardee, Highlands, Okeechobee, Polk
8	Hillsborough, Manatee, Pasco, Pinellas, Sarasota
9	Charlotte, Collier, Glades, Hendry, Lee
10	Broward, Dade, Martin, Monroe, Palm Beach, St. Lucie

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Maki, Wilbur R.; Schallau, Con H; Foster, Bennett B.; Redmond, Clair H. 1988. Florida's forest products industry: performance and contribution to the State's economy, 1970 to 1980. Res. Pap. PNW-RP-397. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 22 p.

Although tourism and retirement-related activities dominate the economy in Florida, the forest products industry is a basic industry in northern Florida. Growth in employment was above the national average during the 1970's, and value added by the forest products industry increased between 1972 and 1977. Florida was one of the majority of Southern States in which the forest products industry improved its competitive position during the 1970's.

Keywords: Forest products industries, economics (forest products industries), employment (forest products industries), Florida.

The **Forest Service** of the U.S. Department of Agriculture is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives—as directed by Congress—to provide increasingly greater service to a growing Nation.

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